

# INTEGRATED CIRCUIT PACKAGE HAVING CENTRAL LEADS

## BACKGROUND OF THE INVENTION

### Field of the invention

The present invention relates to an integrated circuit package having central  
5 leads, and more particularly to an integrated circuit package which may be  
conveniently manufactured with reduced manufacturing costs.

### Description of the Related Art

Referring to FIG. 1, a conventional integrate circuit package having  
central leads includes a substrate 10, a glue layer 12, an integrated circuit 14, a  
10 plurality of wires16, and a compound layer18. The substrate10 has an upper  
surface 20, a lower surface22 and a long slot24 penetrating from the upper  
surface20 the lower surface22, the lower surface22 of the substrate10 is formed  
with wiring region26 arranged at the two sides of the long slot24, and the wiring  
region26 is formed with connected points28. The glue layer12 is coated on the  
15 upper surface20 of the substrate10, and is located at the periphery of the long  
slot24. The integrate circuit 14 has a first surface30 and a second surface32, the  
central portion of the first surface30 of the integrate circuit14 is formed with  
bonding pads34, while the first surface30 of the substrate10 is adhered to the glue  
layer12, so as to the bonding pads34 of the substrate10 are exposed from the long  
20 slot24 The wires are arranged within long slot24 of the substrate10, and are  
electrically connected the bonding pads34 of the integrated circuit14 to the

connected points<sup>28</sup> of the substrate<sup>10</sup>. The compound layer<sup>18</sup> is filled within the long slot<sup>24</sup> for protecting the wires.

However, the above-mentioned integrated circuit image has the following drawbacks. When the glue layer<sup>12</sup> is coated on the upper surface<sup>20</sup> of the substrate<sup>10</sup>, the flowed glue of the glue layer<sup>12</sup> is covered on the wiring region <sup>5</sup> 26 through the long slot<sup>24</sup> of the substrate<sup>10</sup>, so that the connected point 28 which are arranged at the wiring region<sup>26</sup>, are covered by the flowed glue.

### SUMMARY OF THE INVENTION

An object of the present invention is to provide an integrated circuit package, <sup>10</sup> which is capable of preventing the flowed glue of the glue layer covered the wiring region, so that the wire bonding is easy.

Another object of the present invention is to provide an integrated circuit package having central leads, which may conveniently manufactured with reduced manufacturing costs.

<sup>15</sup> To achieve the above-mentioned objects, the present invention provides an integrated circuit package having central leads includes a substrate, a glue layer, an integrated circuit, a plurality of wires, and a first compound layer. The substrate has an upper surface, a lower surface, and a long slot penetrating from the upper to the lower surface, the lower surface is forming with wiring regions <sup>20</sup> arranged at the two sides of the long slot, and the wiring regions are forming with a plurality of connected points. The resistant layer is coated on the lower surface of the substrate, and is located between the long slot and wiring region. The glue

layer is coated on the upper surface of the substrate and arranged at the periphery of the long slot. The integrated circuit has a first surface forming with a plurality of bonding pads and a second surface, the first surface is adhered to the glue layer, then the bonding pads are exposed from the long slot of the substrate. The wires, 5 each of which is arranged within the long slot of the substrate, and is electrically connected the bonding pad of the integrated circuit to the connected point of the substrate. The first compound layer is filled within the long slot of the substrate for protecting the each wire.

Utilizing the resistant layer to prevent the flowed glue covered yje 10 connected points may easily achieve the objects and functions of the invention.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a schematic illustration showing a conventional integrated circuit package having central leads.

FIG. 2 is a cross-sectional view showing an integrated circuit package 15 having central leads of the present invention.

FIG. 3 is a top-view of the substrate of the present invention.

### **DETAILED DESCRIPTION OF THE INVENTION**

Referring to FIG. 2, an integrated circuit package having central leads of the present invention includes a substrate40, a resistant layer42, a glue layer44, an 20 integrated circuit46, a plurality of wires47, a first compound layer48, and a second compound layer50.

The substrate40 has an upper surface52, a lower surface54, and a long slot 56 penetrating from the upper52 to the lower surface54. The lower surface54 of the substrate40 is formed with wiring regions58 arranged at the two sides of the long slot56, and the wiring regions58 are formed with a plurality of connected  
5 points60, each of which is formed with ball grid array. Please referring to FIG.3, the length of the wiring region 60 is shorter than the long slot56 of the substrate40. Therefore, while the long slot56 of the substrate is drilled, the periphery of the long slot56 may be cracked, so that the flowed glue of the glue layer44 can not flow to the wiring regions58 via the cracked.

10 The resistant layer42 is coated on the lower surface54 of the substrate40, and is located between the long slot56 and wiring region58. In preferred the embodiment, the resistant layer42 is made of green .

The glue layer44 is coated on the upper surface52 of the substrate40, and is located at the periphery of the long slot56.

15 The integrated circuit46 has a first surface62 on which a plurality of bonding pads66 are formed, and a second surface64. The first surface62 is adhered to the glue layer44, thus, the bonding pads66 are exposed from the long slot56 of the substrate40.

The plurality of wires47, each of which is arranged within the long slot56  
20 of the substrate40 and is electrically connected the bonding pad66 of the integrated circuit46 to the connected point60 of the substrate40.

The first compound layer48 is filled within the long slot56 of the substrate40 for protecting the each wire47, respectively.

The second compound layer50 is covered on the upper surface52 of the substrate40 to prevent the integrated circuit46.

5       The invention has the following advantages.

1. Since if the flowed glue of the glue layer44 is flowed to the lower surface54 of the substrate40 through the long slot56, the flowed glue can be prevented by the resistant layer42 to flow to the wiring regions58, so that the connected points60 may not covered by the flowed glue.
- 10       2. Since the length of the wiring regions58 are shorter than the long slot56, so that, while drilled the long slot56, if the substrate40 is cracked, which is can be not coupled to the wiring regions58, thus the connected points60 can be not covered by the flowed flue of the glue layer44

While the invention has been described by way of an example and in terms  
15 of a preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiment. To the contrary, it is intended to cover various modifications. Therefore, the scope of the appended claims should be accorded the broadest interpretation so as to encompass all such modifications.